



**Global Presence  
Personal Attention**

Mr. Jim Bell  
Chief, Engineering Section  
Missouri Department of Natural Resources  
1730 East Elm Street  
Jefferson City, MO 65101

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OCT 24 2008

SUPERFUND DIVISION

October 23, 2008

Dear Mr. Bell:

**Historic Permitted Areas Information, Bridgeton Landfill, St. Louis County**

Bridgeton Landfill Authority representatives have requested that Herst & Associates, Inc. assist in addressing various items discussed in a September 12, 2008 letter from you to Mr. Allen Steinkamp, given that Herst & Associates, Inc. is the lead consultant for CERCLA activities associated with Operable Unit 2 and has ongoing experience with environmental compliance at the recently-closed solid waste landfill area at the facility. The September 12, 2008 letter indicates that a summary report is due within 60 days (November 11), to discuss various items including closure of historic permitted areas at the facility. In response, and well in advance of the November 11 submittal deadline, Herst & Associates, Inc. is attaching a summary of historic permitted areas at the facility. The summary of historic permitted areas was previously prepared by Mr. Lee Tharpe and Midwest Environmental Consultants, PC (MEC) in 1995. Also attached is a map prepared by MEC that identifies the various permitted area boundaries.

Please review the attached information in light of the request for a summary of historic permitted areas. After completion of your review, please contact me and/or Allen Steinkamp to discuss the information.

Sincerely,

Herst & Associates, Inc.

Ward Herst  
Managing Director



Cc: Dan Wall – USEPA  
Allen Steinkamp – Bridgeton Landfill Authority  
Rick Walker – Bridgeton Landfill Authority  
Branden Doster – Hazardous Waste Program  
Chris Nagel – Solid Waste Management Program  
John Haasis – St. Louis County Department of Health  
Joe Trunko – St. Louis Regional Office  
Victoria Warren - AWIN

**LIDLAW WASTE SYSTEMS (BRIDGETON), INC.  
SANITARY LANDFILL**

**PERMIT CONSOLIDATION  
ENGINEERING REPORT**

June 1995

Prepared for:  
**LIDLAW WASTE SYSTEMS (BRIDGETON), INC.  
13570 ST. CHARLES ROCK ROAD  
BRIDGETON, MISSOURI**

Prepared by:  
**MIDWEST ENVIRONMENTAL CONSULTANTS, P.C.  
522 EAST CAPITOL AVENUE  
JEFFERSON CITY, MISSOURI**

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**Figure 2 - General Highway Map for St. Louis County**

**Figure 3 - Flow Schematic of Permitted Leachate Management System**

## I. INTRODUCTION

Laidlaw Waste Systems (Bridgeton), Inc owns and operates a sanitary landfill in Bridgeton, Missouri. The site is located approximately 0.75 miles north of Interstate 70 and immediately south of St. Charles Rock Road. This landfill operates under two separate permits: (1) the Missouri Department of Natural Resources (MDNR) Solid Waste Disposal Area Operating Permit No. 118912 which was issued on November 18, 1985 and (2) the St. Louis County Department of Health (DOH) Permit No. 0418.

The purposes of this document are as follows:

- (1) Provide a comprehensive summary of the terms and conditions of the sanitary landfill's current permits.
- (2) Prepare a master plan (site plan sheets) of all known appurtenances.
- (3) Compare current operations to current regulations.
- (4) Provide a history of the site.

In conjunction with this document, a set of engineering plan sheets has also been developed. The plan sheets are as follows:

- Title Sheet
- 1. Quarter Mile Zoning and Land Use Map
- 2. Utilities and Property Map
- 3. Historic Development Plan
- 4. Existing Conditions
- 5. Original Bottom Contours and Leachate Collection
- 6. Permitted Gas Management System
- 7. Leachate Treatment System Design
- 8. Leachate Holding Lagoon Design
- 9. Intermediate Stormwater Management Plan (not available)
- 10. Final Development Plan
- 11. Cross Sections - I
- 12. Cross Sections - II
- 13. Cross Sections - III

14. Cross Sections - IV
15. Borrow Area Plan
16. Environmental Monitoring Plan
17. Leachate Collection System Details
18. Intermediate Stormwater Management Details (not available)
19. Miscellaneous Details
20. Permitted Gas System Details - I
21. Permitted Gas System Details - II
22. Permitted Gas System Details - III
23. Permitted Gas System Details - IV
24. Historical Details - I
25. Historical Details - II
- 26-39. As Built Gas Collection System (I-XIV)

This document along with the above-listed plan sheets are based primarily on the original conditions and documents of permit #118912. However, permit addendums and other significant historical correspondence documents also played a vital role in assembling this document and are therefore contained in Appendix 1. Other important sources of information in the preparation of this document include record searches, personnel interviews, and site inspections.

Throughout this document Laidlaw Waste Systems (Bridgeton), Inc. will simply be referred to as Laidlaw and the sanitary landfill that operates under the MDNR Solid Waste Disposal Area Operating Permit #118912 will be referred to as Bridgeton SLF.



## II. SITE INFORMATION

This section provides detailed site information for the Bridgeton SLF. The specific topics addressed are site location, land use and zoning, site history, utilities, and site access and control.

### A. Site Location

The landfill is located in U.S. Survey 131, Township 47 North, Range 5 East in St. Louis County, Missouri. This landfill is located approximately 0.75 miles north of U.S. Highway 70 and immediately south of St. Charles Rock Road. The landfill site is located entirely within the City of Bridgeton.

The applicable portions of the St. Charles Quadrangle United States Geological Survey (U.S.G.S.) Map and the General Highway Map for St. Louis County prepared by the Missouri Highway and Transportation Department are displayed as Figures 1 and 2 respectively.

### B. Land Use and Zoning

The City zoning for the site and surrounding land within 1/4 mile of the site is shown on Plan Sheet 1. As can be seen from this plan sheet, the site includes the following zoning designations:

#### *Regular Zoning Districts:*

R-1: One Family Dwelling District

R-3: One Family Dwelling District

Project: Laidlaw Waste Systems (Bridgeton), Inc.  
Permit Consolidation  
Site Location Map  
Project Number: 940130-004

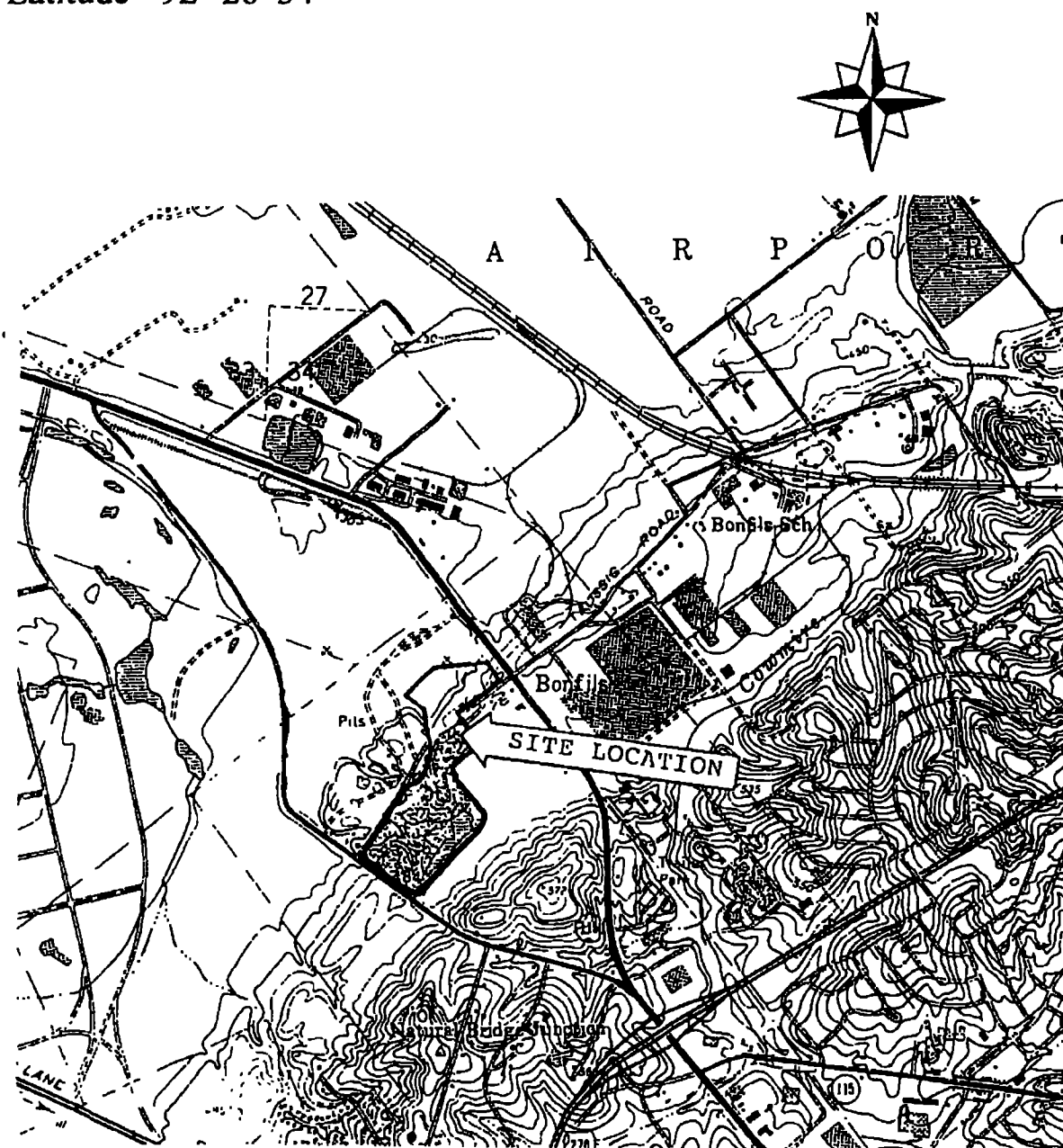
Date: 6/95

*Midwest  
Environmental  
Consultants, P.C.*

Figure 1  
Scale: 1"= 2000'  
United States Geological Survey St. Charles, MO Quadangle

Longitude - 38° 46' 12"

Latitude - 92° 26' 34"



Project: Laidlaw Waste Systems (Bridgeton), Inc.  
Permit Consolidation  
Site Location Map  
Project Number: 940130-004

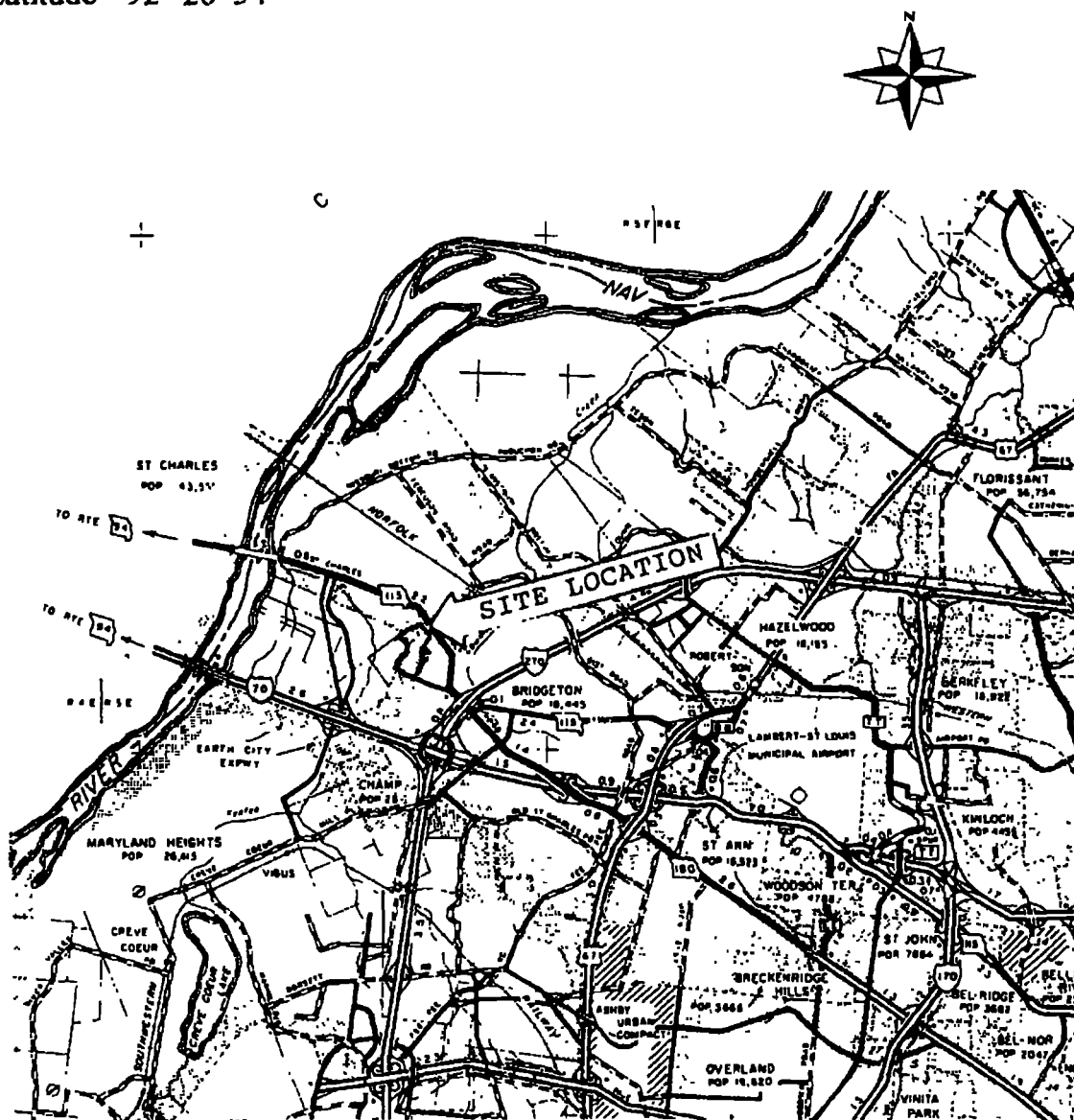
Date: 6/95

*Midwest  
Environmental  
Consultants, P.C.*

**Figure 2**  
**Scale: 1" = 2 miles**  
**General Highway Map for St. Louis County**

Longitude - 38° 46' 12"

Latitude - 92° 26' 34"



B-3: Travel/Entertainment Services District

B-4 General Commercial District

M-1: Manufacturing District, Limited

M-2: Manufacturing District

*Special Zoning Districts:*

B-5(f): Planned Commercial District: West Lake Quarry Tract

M-3(g): Planned Manufacturing District: Northwest Industrial Park - 13575 St.  
Charles Rock Road

M-3(n): Planned Manufacturing District: West Lake Quarry Tract

See Appendix 2 for specific land use information for the above-listed zoning designations.

The property line depicted on Plan Sheet 1 (Land Use and Zoning Map), as well as all the other plan sheets which show the site's property line, assumes that Old St. Charles Rock Road is not abandoned. However, if Old St. Charles Rock Road is officially abandoned then the property line along the southern boundary would extend to the center line of Old St. Charles Rock Road.

**C. Site History**

It is estimated that the site has been utilized as a quarry since the early 1930s. On April 23, 1952, the Office of Zoning Enforcement of St. Louis County granted permission to V.R. Cruse and L.E. Trump, owners of the property, to operate a sanitary landfill. It is

assumed that the above-mentioned persons were full or partial owners of West Lake Quarry.

In a May 16, 1969 letter from H. Clifford Mitchell, P.E. (the Assistant Commissioner of Environmental Health Services for the St. Louis County Health Department) to Mr. William A Richter (Attorney) it was stated that prior to 1964 the facility was only authorized to accept combustible material (see Appendix 1) Following the closure of the Wade Landfill on Highway 67, the site was authorized to accept all forms of non hazardous solid waste. West Lake Landfill, Inc. became a separate entity from West Lake Quarry on its date of incorporation on February 16, 1962.

Prior to coming under state regulatory authority in the early 1970s, West Lake Landfill, Inc. had six separate disposal areas on the site. These areas, referred to as Areas 1-6, are shown on Plan Sheet 3. Subsequent to MDNR Formation, MDNR issued two permits for Areas 1-6. These were permit #218903 and permit #118903. It is not known exactly when each area was filled or with what each area is filled. However, based on the engineering report prepared by Rogers and Associates, Inc. in March 1974 and the accompanying plan sheets prepared by The Elbring Company, the following comments can be offered:

- Areas 1, 2, 3, 4 and 5 have all been used for both sanitary and demolition fill.
- Areas 2 and 4 were to be closed and completed at the time of the writing of the above-mentioned report.

- Areas 1, 3, 5, and 6 were originally used as sanitary fill areas, however, following the above-mentioned report they were to be sealed off with 24 inches of clay and used for demolition fill only. These areas were subsequently permitted under permit #218903.
- Area 6 is a partial and integral portion of Area 5 which had been completed as a fill area at the time of the writing of the above-mentioned report.
- No provisions were made for the collection of leachate. The engineering report states that it was confined to the fill areas by clay lining and cover of the refuse cells.
- Lateral gas movement from sanitary fill beneath demolition fill was to be controlled by gas vents. These vents were to be round openings filled with graded crushed limestone (see Plan Sheet 25 for detail).

The site came under state regulatory authority when the MDNR was formed in 1974. The site consists of a total of approximately 214 acres of which 52 acres are currently permitted under permit #118912. Since the inception of the MDNR, a total of approximately 86.5 acres either has been used or is currently in use as a sanitary landfill. In total, the site has received five separate MDNR sanitary landfill operating permits and two MDNR demolition landfill operating permits. The site's sanitary and demolition landfill permit history is summarized in Table 1 and the location of each permit area is shown on Plan Sheet 3.

**Table 1**  
**Bridgeton Site**  
**Solid Waste and Demolition Landfill Permit History**

No.	Type	Acreage	Issue Date	Consultant
218903 <sup>1</sup>	Demolition	27	1/27/76	Rogers & Associates
118903	Sanitary	25	1/27/76 <sup>2</sup>	Rogers & Associates
Addendum	3.5 acre expansion	3.5	5/23/78	Paul H. Himebaugh
118906	Sanitary	13	1/22/79	Paul H. Himebaugh
118908	Sanitary	6	8/27/80	Reitz & Jens, Inc.
118909	Sanitary	9	8/20/81	Reitz & Jens, Inc.
218912	Demolition	22	9/19/84	Burns & McDonnell
118912 <sup>3</sup>	Sanitary	52	11/18/85	Burns & McDonnell

<sup>1</sup>Permit #218903 includes Areas 1, 3, 5, and 6.

<sup>2</sup>Actual Authorization was granted on 8/27/74.

<sup>3</sup>Permit #118912 supersedes permits #118909 and #118906; it represented a 33-acre expansion from the area permitted under permits #118909 and #118906.

According to permit #118912, there is a total of 52 acres available for landfill disposal.

However, according to strict interpretation of the engineering report, there is only a total of 49 acres included in permit #118912. These 49 acres are comprised of the following areas:

<u>Area (acres)</u>	<u>Description</u>
13	Originally permitted area under permit #118906.
3	Expansion area under permit #118909 (permit #118909 was for a total area of 9 acres; however, 6 of these acres were originally permitted under permit #118906).
<u>33</u>	<u>Expansion area</u> under permit #118912
49	Total

The acreage issue is further complicated by the fact that the permit boundary, which is implicitly shown on Drawing 2, Revision 3 of Burns & McDonnell's permit drawings (final revision date: July 27, 1987), measures approximately 54.1 acres instead of the 52

acres stated in the permit. Acreages are listed on this drawing for the three areas (Area 1, Area 2, and Northern Closure Area) that comprise the permitted area. These acreages total 52 acres, however, as previously stated they measure approximately 54.1 acres.

In an effort to further explore this issue the permitted area or assumed approximation was measured on the followings drawings:

<u>Acreage</u>	<u>Drawing</u>
54.0	Foth & Van Dyke; Bridgeton Sanitary Landfill, Figure 1; April 1993.
59.0	Paul H. Himebaugh, Consulting Engineer; Location & Area Maps with final Contours; West Lake Landfill, Inc.; Plate 1; Revision December 19, 1978. (The permit boundary south of permit #118906 was approximated based on the quarry wall.)

A contributing factor to this discrepancy is the fact that permit #118906 is listed as 13 acres on the issued permit, but measures 14.7 acres on the actual permit drawings. It is believed that Burns & McDonnell's permit boundary does not accurately reflect this portion of the permit boundary for permit #118912.

In addition to having multiple existing and closed sanitary and demolition landfills, the Bridgeton SLF is also a Superfund site as designated by the United States Environmental Protection Agency in 1990. This designation encompasses the entire site. Two areas on the site (totaling approximately 36.5 acres) that possess low-level radioactive wastes are collectively known as Operating Unit (OU)-1. The remainder of the site (that is, the entire site with the exception of the 36.5 acres known as OU-1) is referred to as OU-2.



Although further explanation of these areas is beyond the scope of this document, the two areas of OU-1 are shown on Plan Sheet 3

In 1988 Laidlaw purchased all landfilling operations and associated properties from West Lake Landfill, Inc. and the name was legally changed to Laidlaw Waste Systems (Bridgeton), Inc., Sanitary Landfill. West Lake Quarries, Inc. possesses a license agreement and still operates the Red-Bird Ready-Mix plant; however, all quarrying operations have ceased at the site.

The site currently operates under permit #118912 which was issued on November 18, 1985. However, there have been a significant number of addendums issued since this date. In order to provide necessary thoroughness and detail all of these addendums along with the original permit letter and other significant correspondence are contained in Appendix 1. All permit addendums are summarized in the following listing.

**Date:** November 18, 1985

**RE:** Permit Issuance, Permit Number 118912

**Conditions:**

1. This permit, Solid Waste Disposal Area Operating Permit #118912, encompasses the proposed expansion area and additional solid waste fill by West Lake Landfill, Inc. over the disposal areas permitted under Solid Waste Disposal Area Operating Permit Numbers 118906 and 118909 issued to West Lake Landfill, Inc. This document supersedes and replaces the previous permits and permit documents.
2. West Lake Landfill, Inc. shall establish and maintain an escrow fund for the purpose of providing post-closure care and maintenance of the landfill. The amount and manner of maintaining this fund shall be as described in the approved permit documents.
  - A. Fifty percent of the first yearly cost of this fund shall be deposited in this fund prior to acceptance of solid waste.
  - B. The existence and maintenance of this fund shall be verified to the MDNR by the permittee prior to acceptance of solid waste. The maintenance of this fund shall be verified to the department annually prior to the anniversary date of establishment of the fund, in writing, by the financial institution wherein this fund is deposited.

3. An environmental assessment of the entire landfill site shall be initiated by West Lake Landfill, Inc. or any successor or assign ("hereinafter West Lake") immediately after the issuance of this permit. This assessment, including hydrogeologic investigation, shall be completed by November, 1986, and shall be used as the basis for the development of a monitoring program and feasibility study to assess necessary remedial action. The conclusions of the feasibility study shall be submitted to the MDNR within two years after the issuance of this permit. Implementation of necessary remedial action will be undertaken by West Lake in accordance with reasonable design and construction scheduling. Additional groundwater monitoring requirements will be required, based on review of the hydrogeologic investigation and feasibility study.
4. Initial training of the waste inspector (spotter) shall be provided so that he/she is able to adequately perform the duties as described in the permit documents. At a minimum, the initial training for this employee shall include.
  - A. Familiarization with 10 CSR 80-3.010(3), solid waste excluded
  - B. Identification and recognition of unacceptable wastes, as described in 10 CSR 80-3.010(3).
  - C. Familiarization with the necessary procedures to obtain approval of special waste disposal requests.
  - D. Provision of a list of all special wastes approved for disposal by the MDNR.
5. Intermediate cover is not required until the fill is above the quarry rim, as proposed in the approved permit documents
6. Leachate and sludge from leachate treatment shall be collected, treated and disposed of as per the approved permit documents
  - A. Leachate shall be treated and disposed of in accordance with all applicable water quality laws, rules, regulations, and policies as enforced by the Water Pollution Control Program, MDNR.
  - B. West Lake Landfill, Inc. shall two times a year test the leachate and leachate treatment sludge for hazardous waste characteristics pursuant to 10 CSR 25-4.010 (2 through 5) and submit the results of such tests within 60 days to the MDNR. If hazardous wastes are detected in the leachate or sludge, West Lake Landfill, Inc. shall implement proper handling of such hazardous wastes in accordance with the Missouri Hazardous Waste Management law, Rules and Regulations.
  - C. Sludge from the on-site leachate treatment system is acceptable for disposal at the landfill, unless tested to be a characteristic hazardous waste as per Condition #6B.
  - D. Static leachate levels in the collection sumps in the unfilled area of the quarry, as shown in the approved permit documents, will be maintained at a level less than 30 feet above the base of the sump. The leachate level shall be checked monthly, recorded and made available upon MDNR request.
  - E. Static leachate levels in the previously filled areas of the quarry, as shown on the approved permit documents, shall be maintained at a level less than 50 feet above the base of the sump. The leachate level shall be checked monthly, recorded and made available upon MDNR request.
7. A. Groundwater monitoring shall be required as per the document entitled Monitoring Program for the West Lake Landfill, Inc. Sanitary Landfill. The wells shall be sampled within 30 days of issuance of the permit. The first sample will be used as a

- background sample and should be analyzed for the extended list of parameters, as if it were an annual analysis.
- B. Three groundwater monitoring wells have been installed in the area of the grout curtain in the northeast corner of the large quarry. Two wells were installed during the placement of the initial grout curtain and were designated as groundwater monitoring wells (GWMW) #4/III and (GWMW) #14/III in the application for operating permit. The third well was installed during the placement of grout curtain #2 and was designated as groundwater monitoring well (GWMW) #17/IV in the application for operating permit. The water level in these wells shall be monitored monthly, recorded, and made available upon department request.
  - C. All three wells will be monitored, unless the department is requested to reevaluate the monitoring program. If requested and approved, one or more of the wells can be eliminated from the sampling program if hydraulic communication between the wells is verified.
  - D. Additional sampling points may be added to the monitoring program depending on the results of the hydrogeologic investigation (see Condition #4).
8. The following previously approved special wastes are approved for disposal under permit #118912:
- A. Fly ash derived from a coal burning industrial boiler, generated by McDonnell Douglas Corporation; 400 tons per month; approved November 1, 1984.
  - B. Incinerator ash derived from municipal refuse incineration, generated by McDonnell Douglas Corporation; 800 cubic yards per month; approved November 1, 1984.
9. Each eight inch lift of the twelve-foot wide pad in the northeast corner should be tested for soil density to confirm that a minimum compaction of 90 percent of the standard proctor density is obtained.
10. All surface water discharges shall be made in accordance with all applicable air quality laws, rules, regulations, and policies as enforced by the Water Pollution Control Program, MDNR.
11. Methane gas shall be vented or burned in accordance with all applicable air quality laws, rules, regulations, and policies as enforced by the Water Pollution Control Program, MDNR.
12. Department review and approval of any planned final use is required prior to implementing a designated, commercial, final use of the site.
13. Within six months of the date of issuance of the permit, two copies of a final, comprehensive engineering report shall be submitted to the Waste Management Program. This report shall incorporate all present design and operating information into one reference manual detailing the final approved plans and specifications for the design and operation of the proposed sanitary landfill. This report shall incorporate all information required by regulation, eliminate all contradictory information, and include all revisions and additions to the original application for operating permit, as approved.

**Date:** March 13, 1987

**Addendum:** Expanded Gas Collection System and Utilization of Gas in Asphalt Plant (expansion consisted of nine collection wells, approximately 3,015 feet of collection pipe, a moisture removal unit, a blower building, and a waste gas flare)

**Conditions:** Continue to comply with all local requirements and maintain all necessary local permits and approvals.

**Date:** June 19, 1987

**Addendum:** Spray Irrigation of Treated Leachate

**Conditions:**

1. Land irrigation of the leachate shall cease after September 30, 1987.
2. Runoff of the treated leachate is not to enter surface drainage ditches
3. Application rates shall be based on approved documents
4. Land application of treated leachate shall conform to all applicable water quality laws, rules and permits enforced by the MDNR's WPCP.

**Date:** February 8, 1988

**Addendum:** Revised Chimney Drain Design (rock replaced with polyethylene drainage net that has geotextile bonded to both sides)

**Conditions:** None

**Date:** November 28, 1988

**Addendum:** Change of Ownership

**Conditions:** Refer to Appendix 3.

**Date:** May 10, 1989

**Addendum:** Revised Groundwater Monitoring Report Forms and Addition of TOX and TOC to Annual Sampling List

**Condition:** Failure to comply with any aspect of this program may be viewed as a violation of a condition of the solid waste disposal area permit.

**Date:** November 21, 1989

**Addendum:** Extended Operating Hours

**Conditions:**

1. Continued application of daily cover.
2. No operational difficulties traceable to the extension of operating hours

**Date:** July 13, 1990

**Addendum:** Leachate Collection Sump (LCS-4) added and drain redirected.

**Conditions:** Conditions pursuant to the permit addendum are to comply with conditions specified in permit number 118912.

The department reserves the right to revoke, suspend or modify this addendum and/or permit number 118912 after due notice:

1. If it is found that the holder of the permit is in violation of the Missouri Solid Waste Management Law, or the Missouri Solid Waste Management Rules;
2. For failure to operate in accordance with the approved plans, specifications and operating procedures;
3. For failure to comply with any and all conditions of the permit;

4. For creating a public nuisance, health hazard or causing environmental pollution, or
5. If it is found that additional construction or alteration of the solid waste disposal area is necessary to comply with any and all rules promulgated in accordance with the Missouri Solid Waste Management Law

**Date:** July 23, 1990

**RE:** MDNR request that an NPDES permit application be submitted for the demolition landfill.

**Date:** January 11, 1991

**Addendum:** Changes in Groundwater Monitoring Program

**Condition:** Submit by April 1, 1991 well abandonment procedures, well as-builts, boring logs and a background sample for each newly constructed well.

**Date:** July 31, 1992

**Addendum:** Modify Gas Collection System from a Passive to an Active System

**Conditions:**

1. Submit certification stating that implementation was in accordance with plans and specifications
2. Meet requirements of sections 260.226 and 260.227, RSMo 1990 as applied to existing sanitary landfills to indicate any changes made as a result of this permit addendum. Also, submit revised closure/post-closure plans and cost estimates.
3. Obtain compliance with all applicable NPDES permits.

**Date:** September 9, 1992

**RE:** MDNR request for a financial assurance instrument to be submitted for both the sanitary and the demolition landfills. The deadline was 60 days from receipt of this letter.

**Date:** November 20, 1992

**Addendum:** Revised Closure/Post-Closure Plan

**Conditions:**

1. Submit certification stating that implementation was in accordance with plans and specifications.
2. Revise post-closure plans to reflect the additional costs for continued operational, maintenance, and incidental costs for operating pumps.
3. As part of the financial assurance for post-closure care, set up a separate funded irrevocable escrow or trust fund to cover the cost of perpetual care

**Date:** January 5, 1993

**Addendum:** Use of Alternate Daily Cover

**Conditions:**

1. The Solid Waste Management Program must be notified of the day the trial period will begin;
2. Please submit two copies of the final bid specifications for the material to be used and two copies of a detailed operations manual specifying the final guidelines for the use of

the geotextile daily cover;

- 3 Upon completion of the six month trial period, please submit two copies of a detailed report, including but not limited, to daily records of whether or not the panel was used, weather conditions, unforeseen operational problems, notes on the performance and status of the geotextile, any reportable increase in leachate generated, conclusions and recommendations from the use of the geotextile daily cover.

**Date:** February 10, 1993

**Addendum:** Relocation of Gas Flare

**Conditions:**

1. Submit certification stating that implementation was in accordance with plans and specifications.
2. Meet requirements of sections 260.226 and 260.227, RSMo 1990 as applied to existing sanitary landfills to indicate any changes made as a result of this permit addendum. Also, submit revised closure/post-closure plans and cost estimates.
3. Obtain compliance with all applicable NPDES permits.
4. Submit as-built drawings.

**Date:** October 8, 1993

**Addendum:** Subtitle D Extension

**Conditions:**

1. Remain in compliance with all permit conditions.
2. Develop filling progression to promote stormwater drainage in order to minimize infiltration and leachate generation, while maintaining effective soil erosion control.
3. Limit the landfill to the permitted horizontal and vertical boundaries while maintaining sideslopes of 33 percent or less. Limit accepted wastes to flood debris and other solid wastes.

**Operating and Closure Requirements:**

1. Establish survey controls within 60 days upon receipt of this addendum letter.
2. Obtain compliance with all applicable NPDES permits as a result of any changes resulting from this extension.
3. Place three feet of final cover upon closure. Provide certification by a professional engineer of final cover depth on 50-foot centers.
4. Establish vegetation on disposal area and borrow area within 180 days after placement of final cover.
5. Submit the following within 60 days upon receipt of this addendum letter: (1) revised closure/post-closure plans and cost estimates, and (2) revised financial assurance instrument, if necessary.
6. Submit the following by June 9, 1994 (if the facility was closed by April 9, 1994):
  - Final grades and as-builts drawings which include associated landfill appurtenances to show proper final development of this landfill in accordance with this extension.
  - Details concerning the types and depth of final cover verified on 50-foot centers and vegetation establishment.

- Submit a topographic boundary survey designating the entire permitted acreage including final grades and associated landfill appurtenances in accordance with 10 CSR 80-3.010(16)(C)2

**Date:** October 28, 1993

**Addendum:** Modified life of permit to be for the anticipated life of the facility

**Conditions:** None.

**Date:** March 8, 1994

**Addendum:** Landfill fire mitigation

**Conditions:**

- 1 Apply a professional engineer's seal to document entitled "Proposal, Landfill Fire Mitigation, Laidlaw Bridgeton Sanitary Landfill, Bridgeton, Missouri" within 30 days.
- 2 Seek prior written approval for any changes in operation and/or design other than those described in the application and approved in permit.
3. Submit three copies of report to the SWMP.
4. The quarterly gas monitoring report to be sent to the SWMP is to include all reports on continuing monitoring and maintenance efforts for control of the fire.

**Date:** May 4, 1994

**Addendum:** Subtitle D liner waiver on the ramp leading into the landfill and the side walls of the landfill. Also, fire mitigation proposal approved.

**Conditions:**

1. Report on efforts to mitigate the current and any future landfill fire.
2. Report on the effectiveness of the current soil liner to control gas migration out of the landfill.
3. Submit an additional modification request for the liner showing how the landfill gas shall be controlled if the landfill cannot be controlled by the soil liner.

**Date:** May 4, 1994

**Addendum:** Interim stormwater detention basins and a gas condensate line.

**Conditions:**

1. Submit certification within 30 days of completion.
- 2 Submit to St. Louis Regional Office two copies of as-built drawings within 60 days of completion of construction if gas condensate line is located different from location shown in drawing.
3. Notify St. Louis Regional Office of all permits for storm water discharges.

**Date:** August 30, 1994

**Addendum:** Use of petroleum contaminated soil as an alternative daily cover for a six (6) month trial period.

**Conditions:**

1. The petroleum contaminated soil is approved for use only as daily cover material and shall not be used for intermediate cover or final cover.
2. The beneficial use of petroleum contaminated soils as daily cover materials shall follow

disposal and testing practices as outlined in the solid waste technical bulletins entitled Special Waste Technical Bulletin (dated January 1992) and Disposal of Soil Contaminated with Virgin Gasoline or Virgin Fuel Oil (dated December 1991) and shall meet the cover requirements as specified in the Missouri Solid Waste Management Law and Rules 10 CSR 80-3.010(14). Contaminated soils shall meet a classification of or be mixed with other cover soils to meet a Unified Soil Classification of CH, CL, ML, MH, or SC for daily cover.

3. The owner/operator shall screen the incoming petroleum contaminated soil for excessive or offensive odor emissions and for foreign debris or other items which would create an unsightly appearance and interfere with or limit its use as daily cover.
4. Within sixty (60) days of completion of the trial period, two copies of a detailed report must be submitted including but not limited to daily records of whether or not the alternative cover was used, weather conditions, unforeseen operational problems, any reportable increase in leachate generated, photographs, conclusions, and recommendations concerning the use of the contaminated soil as daily cover.
5. Petroleum contaminated soils shall not be used as daily cover when the following are detected:
  - A. Soil contaminated with petroleum products has strong offensive odor;
  - B. Soil contaminated with petroleum products contains excessive debris which would create an unsightly appearance on the landfill;
  - C. Soil contaminated with petroleum products which is received during periods of excessive wet or severe inclement weather could result in contaminated surface water runoff from the active fill face when it is used as daily cover; or
  - D. Soil contaminated with petroleum products does not meet the required testing limits as described in the aforementioned technical bulletins.
6. The use of soil contaminated with petroleum products shall not be used as daily cover in waste disposal cells located at the approved final waste contours or in locations where storm water runoff from the active face cannot be removed or collected through a leachate collection system for treatment.
7. Prior to use of petroleum contaminated soil as daily cover material the generator of the waste must provide lab results with a special waste disposal form on representative samples of the soil. Two copies of the testing results shall be submitted to the MDNR's St. Louis Regional Office.
8. The use of petroleum contaminated soil as daily cover material must conform to all applicable water quality laws, rules, regulations and permits which are enforced by the MDNR's Water Pollution Control Program.
9. The use of petroleum contaminated soil as daily cover material must conform to all applicable air quality laws, rules, regulations and permits which are enforced by the appropriate air pollution control regulatory agency.

**Date:** March 15, 1995

**Addendum:** Removal of cardboard near the working face of the landfill.

**Conditions:** MDNR reserves the right to revoke, suspend, or modify this approval and/or permit number 118912 after due notice, if the permit holder fails to maintain the facility in compliance with the state's Solid Waste Management Law and Rules, the terms and



conditions of the permit, and approved engineering plans and specifications.

**Date:** April 12, 1995

**Addendum:** Modification of operations to extract cardboard from incoming loads at the edge of the working face (St. Louis Department of Health).

**Conditions:** None listed.

#### **D. Utilities**

Specific information and location of all known utilities are shown on Plan Sheet 2.

Utilities include storm sewers, gas lines, water lines, electrical lines, sanitary sewers, and septic tanks.

Electrical power for the facility is supplied by Union Electric (UE). The electrical demands of this facility consist of lighting, HVAC of the landfill office, the gas flare system, pumps and aerators for leachate management, and miscellaneous electrical requirements for maintenance. UE supplies 3 phase power to the facility. There have been no known problems with the power supply.

According to the engineering report (January 1986), there were no utility easements or lines located on the actual disposal site. Also, there were no known water supply wells within the 1/4-mile surrounding boundary.

#### **E. Site Access and Control**

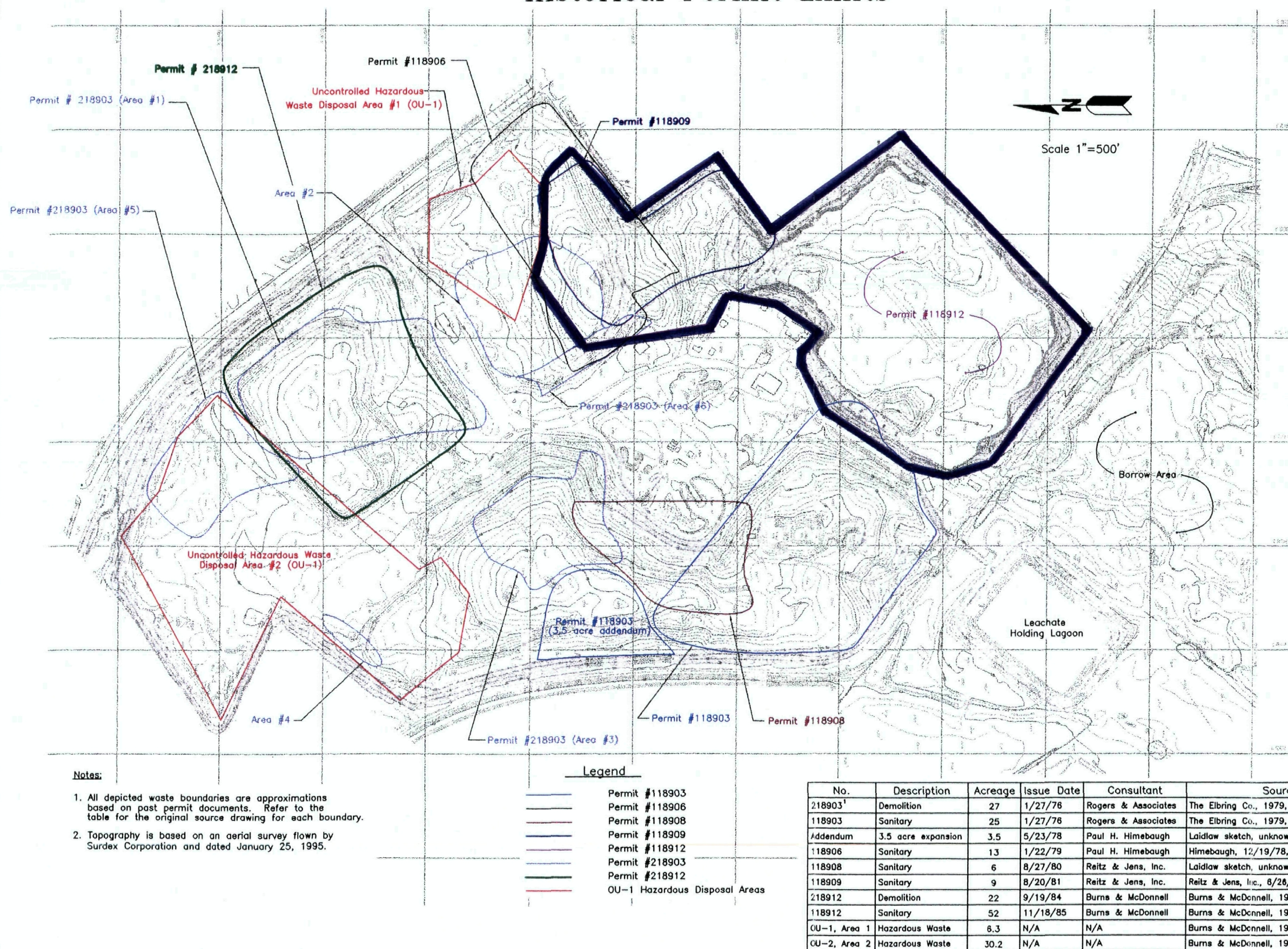
Access to the landfill is provided by St. Charles Rock Road, a main entrance road, and landfill service roads (see Plan Sheet 4). The site is always accessible using St. Charles Rock Road since it is not susceptible to flooding or closing due to inclement weather. The main entrance road is an all weather asphalt surface. Landfill service roads are constructed

as needed for access to the working face. All entering vehicles must pass by the landfill office and then by the scale house prior to proceeding toward the working face

Current operating hours are from 3:00 a.m. to 4:00 p.m. Monday through Friday and from 6:00 a.m. to 1:00 p.m. on Saturday.











Figure 3  
Historical Permit Limits



Notes:

1. All depicted waste boundaries are approximations based on past permit documents. Refer to the table for the original source drawing for each boundary.
2. Topography is based on an aerial survey flown by Surdex Corporation and dated January 25, 1995.

### Legend

	Permit #118903
	Permit #118906
	Permit #118908
	Permit #118909
	Permit #118912
	Permit #218903
	Permit #218912
	OU-1 Hazardous Disposal Areas

No.	Description	Acreage	Issue Date	Consultant	Source
218903 <sup>1</sup>	Demolition	27	1/27/78	Rogers & Associates	The Elbring Co., 1979, Dwg 3-1
118903	Sanitary	25	1/27/78	Rogers & Associates	The Elbring Co., 1979, Dwg 3-1
Addendum	3.5 acre expansion	3.5	5/23/78	Paul H. Himebaugh	Laidlaw sketch, unknown origin
118906	Sanitary	13	1/22/79	Paul H. Himebaugh	Himebaugh, 12/19/78, Plate 1
118908	Sanitary	6	8/27/80	Reitz & Jens, Inc.	Laidlaw sketch, unknown origin
118909	Sanitary	9	8/20/81	Reitz & Jens, Inc.	Reitz & Jens, Inc., 8/26/81, Sheet 2 of 3
218912	Demolition	22	9/19/84	Burns & McDonnell	Burns & McDonnell, 1989, Dwg 2
118912	Sanitary	52	11/18/85	Burns & McDonnell	Burns & McDonnell, 1984, Dwg 4
OU-1, Area 1	Hazardous Waste	8.3	N/A	N/A	Burns & McDonnell, 1989, Dwg 1A
OU-2, Area 2	Hazardous Waste	30.2	N/A	N/A	Burns & McDonnell, 1989, Dwg 1A

<sup>1</sup> Includes Areas 1, 3, 5, and 6. These areas received sanitary waste fill prior to receiving MDNR Demolition Permit No. 218903. Areas 2 and 4 were denied permitting by MDNR, however, they also received waste fill prior to permit denial by MDNR.



MIDWEST ENVIRONMENTAL CONSULTANTS, P.C.

**Project: Laidlaw Waste Systems (Bridgeton), Inc.  
Facility Upgrade And Permit Modification**

Project Number: 940130-004 Date: 12/95